From:	McKenna, James (Jim)
To:	Burt Shephard/R10/USEPA/US@EPA; Helle B. Andersen
Cc:	Gene Revelas; John Toll; Jessica Pisano; Lisa Saban; Mike Johns; ricka@bes.ci.portland.or.us; rjw@nwnatural.com; Valerie Oster; Eric Blischke/R10/USEPA/US@EPA; Chip Humphrey/R10/USEPA/US@EPA; Joe Goulet/R10/USEPA/US@EPA; rgensemer@parametrix.com
Subject:	RE: Lindane test
Date:	10/29/2007 01:13 PM

Burt and Halle:

Just for my information: what is the solubility limit for the lindane? Was this the concentration at which we saw 12/5% mortality in ammocoetes? Jim.

-----Original Message-----
From: Shephard.Burt@epamail.epa.gov [mailto:Shephard.Burt@epamail.epa.gov]
Sent: Monday, October 29, 2007 1:04 PM
To: Helle B. Andersen
Cc: Gene Revelas; John Toll; Jessica Pisano; Lisa Saban; McKenna, James (Jim); Mike Johns; ricka@bes.ci.portland.or.us; rjw@nwnatural.com; Valerie Oster; Blischke.Eric@epamail.epa.gov; Humphrey.Chip@epamail.epa.gov; Goulet.Joe@epamail.epa.gov; rgensemer@parametrix.com
Subject: Re: Lindane test

Thanks Helle for the update.

I'd had a brief chat with a couple of folks about what to do about lindane before the test was complete, anticipating you might run into a solubility maximum problem given where the rangefinder tests came out. A couple of options were to 1.) report out the LC50 as a greater than value, or 2.) run the test with a carrier solvent. Given that one of the ultimate purposes of the toxicity studies was to evaluate the protectiveness of water column screening level benchmarks or toxicity reference values such as ambient water quality criteria to lamprey, it may be good enough to know that the LC50 is substantially higher than the water column benchmark, even though we don't have a numerical estimate of the LC50. I assume, but couldn't tell from your message, that the 12.5% mortality in the highest test concentration was the only partial mortality you got above allowable control mortality.

This also could potentially be an issue for diazinon when NAS gets to that test. My recommendation is to let Dick Caldwell complete his workup of the lindane results, wait for the definitive analytical results to come back in from the exposure tanks (not the monitoring results that Dick is doing, although they should also be informative), then identify the path forward. I know what my ultimate recommendation would be, but I haven't talked with any site managers about it yet.

In the meantime, I've attached a spreadsheet section that compiles the available high quality LC50 data for freshwater species exposed to lindane. Its linked to other files in our office, just click on don't update links unless you like watching your computer hang up. The ECA term you'll see in the spreadsheet is defined as the LC50 divided by 2.27 (roughly analogous to the approach EPA uses to derive water quality criteria, which divides a final acute value by two, I can give you the details if you like, but they're not applicable to Portland Harbor, the spreadsheet was developed for other work). The CA term is the acute lindane water quality criterion. You can make your own judgement regarding the relative sensitivity of lamprey to other aquatic species.

Best regards,

Burt Shephard
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"If your experiment needs statistics to analyze the results, then you ought to have done a better experiment"
- Ernest Rutherford

(See attached file: Lindane freshwater Table 3-1.xls)

"Helle B. Andersen" <helleb@windwardenv.com> 10/26/2007 12:09 PM

To: Burt Shephard/R10/USEPA/US@EPA
cc: "John Toll" <johnt@windwardenv.com>, "Lisa Saban" <lisas@windwardenv.com>, "Mike Johns" <mikej@windwardenv.com>, "Jessica

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Subject
Lindane test

Burt,
The lindane toxicity test that ended earlier this week was not able to produce an LC50. Only 12.5% of the ammocoetes died in the highest concentration. The highest concentration was close to saturation based on information on the solubility of lindane at 17C and Dick Caldwell's experiences with the chemical. The lab will continue working with the three remaining chemicals (starting with naphthalene) which will provide EPA and LWG time to discuss the results of the lindane test and the path forward for testing with lindane.
Helle

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